

DOCUMENT RESUME

ED 037 988

EF 004 216

TITLE Floors: Care and Maintenance.
INSTITUTION Post Office Dept., Washington, D.C.
REPORT NO Series-S-3 (Rev.)
PUB DATE Sep 69
NOTE 39p.
AVAILABLE FROM Superintendent of Documents, U.S. Government
Printing Office, Washington, D.C. 20402 (\$.30)

EDRS PRICE EDRS Price MF-\$0.25 HC Not Available from EDRS.
DESCRIPTORS Asphalts, Building Materials, Building Operation,
*Cleaning, Equipment, Equipment Maintenance,
*Flooring, Floor Layers, Guidelines, *Maintenance,
*Methods, Performance Specifications, Policy,
*Safety, Standards, Supplies

ABSTRACT

Guidelines, methods and policies regarding the care and maintenance of post office building floors are overviewed in this handbook. Procedures outlined are concerned with maintaining a required level of appearance without wasting manpower. Flooring types and characteristics and the particular cleaning requirements of each type are given along with application methods. Care of equipment, supply procurement, and general safety precautions are also outlined.
(TG)

ED037988

SERIES S-3 (Rev.)



FLOORS

CARE AND MAINTENANCE

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE

OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED
EXACTLY AS RECEIVED FROM THE PERSON OR
ORGANIZATION ORIGINATING IT. POINTS OF
VIEW OR OPINIONS STATED DO NOT NECES-
SARILY REPRESENT OFFICIAL OFFICE OF EDU-
CATION POSITION OR POLICY.

A Publication of the
POST OFFICE DEPARTMENT
WASHINGTON, D.C. 20260
September 1969

EF 004 216

ED037988

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE

OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED
EXACTLY AS RECEIVED FROM THE PERSON OR
ORGANIZATION ORIGINATING IT. POINTS OF
VIEW OR OPINIONS STATED DO NOT NECES-
SARILY REPRESENT OFFICIAL OFFICE OF EDU-
CATION POSITION OR POLICY.

FLOORS

CARE AND MAINTENANCE

PREPARED BY
BUREAU OF OPERATIONS
SEPTEMBER 1969

FOREWORD

This revised handbook on floor care and maintenance applies to all buildings occupied by the Post Office Department where the Department is responsible for cleaning and routine maintenance.

This handbook is for guidance of postmasters, postal plant engineers, building superintendents, and other supervisory employees.

All employees engaged in the maintenance or cleaning of floors and grounds must be provided with a copy and are required to be familiar with all pertinent material.

These procedures must be followed to obtain the required level of appearance without waste of manpower.



*Assistant Postmaster General,
Bureau of Operations.*

CONTENTS

	<i>Page</i>
PART I INTRODUCTION	
A. IMPORTANCE OF FLOOR CARE	1
B. METHODS AND MATERIALS	1
PART II SAFETY	3
PART III FLOORING TYPES AND MAINTENANCE	5
A. INTRODUCTION	5
B. RESILIENT TILE FLOORS	5
1. Types	5
2. Characteristics	5
a. Asphalt Tile	5
b. Rubber Tile	6
c. Bituminous Mastic	6
d. Asphalt Plank	6
e. Vinyl and Vinyl Asbestos Tile	6
f. Linoleum	6
3. Maintenance of Resilient Tile Floors	7
a. Initial Preparation	7
b. Daily Maintenance	7
c. Periodic Maintenance	7
d. Precautions	7
C. NONRESILIENT TILE FLOORS	8
1. Types	8
2. Characteristics	8
a. Terrazzo	8
b. Marble and Travertine	8
c. Ceramic Tile and Quarry Tile	8
d. Concrete	8
3. Maintenance of Nonresilient Tile Floors	8
a. Initial Preparation	8
b. Daily Maintenance	9
c. Periodic Maintenance	9
d. Precautions	9
D. WOOD FLOORS AND CORK FLOORS	9
1. Characteristics	9
a. Wood Floors	9
b. Cork Floors	10
2. Maintenance of Wood Floors and Cork Floors	10
a. Initial Preparation	10
b. Daily Maintenance	10
c. Periodic Maintenance	11
d. Precautions	11
e. Wood Floors Requiring Refinishing	12

	<i>Page</i>
PART IV CLEANING METHODS AND APPLICATION METHODS	13
A. CLEANING METHODS	13
1. Policing	13
2. Dry Maintenance	13
3. Sweeping—Interior Surfaces	13
4. Sweeping—Exterior Paved Surfaces	15
5. Damp Mopping	15
6. Wet Mopping—All Floors Except Wood and Cork	16
7. Hand Scrubbing—(Deck Brush)—All Floors Except Wood and Cork	17
8. Machine Scrubbing—All Floors Except Wood and Cork	18
9. Spray Buffing—All Floors Except Wood and Cork	19
B. APPLICATION METHODS	20
1. Standard Method for Application of Water Emulsion Resin Finish (C-1840)	20
2. Standard Method for Sealing Terrazzo Floors	20
3. Standard Method for Sealing Concrete Floors. (Also An Alternate Method for Sealing Terrazzo Floors)	21
4. Machine Scrubbing (Wood or Cork) Floors With Solvent-Type Surface-Renewer (C-1848)	21
5. Sealing Wood or Cork Floors with Polyurethane Coating (C-1846C)	22
6. Sealing Wood or Cork Floors With Fast-Drying Penetrating Seal (C-1846)	23
7. Applying Solvent-Type Cleaner-Surface Finish (C-1845) to Renewed Wood or Cork Floors	24
8. Machine Scrubbing (Wood or Cork) Floors with Solvent-type Cleaner-Surface Finish (C-1845)	24
9. Renovating Alkali-Damaged Linoleum	25
10. Snow and Ice Removal	26
PART V REMOVING STAINS FROM FLOORS	27
A. GENERAL INSTRUCTIONS	27
B. STAIN REMOVAL CHART	27
C. STAIN REMOVAL METHOD	28
PART VI CARE OF EQUIPMENT	31
A. IMPORTANCE OF CARE	31
B. FLOOR MACHINES	31
C. BATTERY-OPERATED COMBINATION SCRUBBER-VACUUMS	31
D. WET VACUUMS	31
E. BUCKETS AND WRINGERS	31
F. WET MOPS	32
G. DUSTING TOOLS	32
H. STEEL WOOL PADS	32
I. SYNTHETIC PADS	32
PART VII OBTAINING SUPPLIES	33
A. FROM SUPPLY CENTERS	33
B. BY LOCAL PURCHASE	35
C. FROM REGIONAL PROCUREMENT AND SUPPLY	35

PART I

INTRODUCTION

A. IMPORTANCE OF FLOOR CARE

1. Floors represent a large investment. With proper care and maintenance at regular intervals, the life and beauty of floors can be prolonged. In the average post office unit, 35 percent of cleaning activity is spent in floor cleaning and maintenance. It is important that cleaning employees be informed in the proper treatment and maintenance of floors and procedures for cleaning. Clean and tidy surroundings promote more efficient and pleasant working conditions and help maintain the health and safety of employees.
2. Part of the floor maintenance program is to minimize the tracking of dirt and water into lobbies and other parts of the building. Safety matting (C-147) should be placed in lobby vestibules. During wet weather, safety matting should be placed inside the entrance to lobbies and inside employee entrances. This will not only provide safer footing but will protect the floor and reduce the tracking of dirt, water, and ice melting compounds.

B. METHODS AND MATERIALS

There are many types of flooring. Each type requires a different treatment during cleaning operations. Various types of floors react differently to substances used in their cleaning; therefore, it is important that the proper cleaning substance be used on the particular kind of floor. For example, wood floors are absorbent and can be seriously injured by water. Asphalt tile and rubber flooring materials are not affected by water used in proper amounts, but can be damaged by solvents or oils. Improper cleaning techniques can affect the finish of floor surfaces so it is essential that the materials used are not harmful to the particular surface. Following are some basic guiding principles:

1. Cleaning materials used must not be harmful to the floor surface involved.
2. Cleaning operations must be timely, effective and economical.
3. Workers must be provided with the proper equipment and supplies for the floor cleaning job to which they are assigned.
4. There may be slight variations in techniques for applying certain materials as sources of supply change. Follow the manufacturer's directions.
5. Part VII contains the source and procedure for obtaining all the materials and equipment mentioned in this handbook.

PART II

SAFETY

Accidents do not just happen. They are the result of inadequate precautions. Exercise care at all times to prevent accidents which may result in injury to the worker, fellow employees, or to the public. These precautions must be taken in the performance of the job and the handling of equipment and materials:

- a. Extreme caution must be observed by employees to prevent serious injuries from slips and falls on slippery surfaces. The *first step* before mopping or refinishing floors *must* be the placing of *Wet Floor* signs in sufficient number around the area to be cleaned so as to warn everyone. Wherever possible, attach a high visibility rope (C-1801) barricade to the sign and pull taut across the area. When barricading is not possible, warn persons crossing the area of the danger of slipping. To lessen the danger of wet floors, complete work in one small section at a time, then move the barricade to the next area.
- b. During rainy or snowy weather, give repeated attention to mopping up water tracked into entrances and lobbies. Place "Wet Floor" signs (C-1800) at entrances. Place safety matting in vestibules, lobbies, and employee entrances to avoid slipping hazards. After matting has been laid down, inspect all edges for curling. To prevent persons from tripping and falling, immediately tape down, with pressure-sensitive tape (C-146), the curled or rolled portions that do not lie flat on the floor.
- c. Do not leave mop pails, brooms, or other equipment where someone may trip over them.
- d. Do not leave a slippery film on the floor after scrubbing or wet mopping.
- e. When handling steel wool, wear work gloves (S-2005) to prevent skin irritation and infection.
- f. Check electrical equipment regularly for frayed cords, loose wiring, defective ground wires, plugs or outlets. Place Form 4707, *Out of Order*, tag on defective electrical equipment immediately and do not remove until the equipment has been repaired.
- g. Know the adequacy of a circuit before connecting electrical equipment to an outlet. Mark all outlets that will not handle the equipment used in that area.
- h. Be sure the switch is in the *off* position before connecting electrical equipment to the power supply.
- i. Service or maintenance work shall not be done while electrical equipment is in motion or under power. Before servicing equipment, remove the power connector from the outlet.

- j. Trash, treated sweeping mops, and treated sweeping cloths are fire hazards when stored in a closed room or closet without adequate ventilation. Never store them near combustible materials and, if possible, keep them in a room equipped with sprinklers.
- k. Keep greasy or oily rags in closed metal containers until disposed of.
- l. Keep treated sweeping mops and treated dust cloths that are soiled in closed metal containers or in an adequately ventilated storage area prior to laundering and retreatment.
- m. Store supplies carefully. Store flammable solvents only in self-closing safety cans of approved U.L. type.
- n. Make arrangements for prompt removal of all trash and waste material. Until such removal, use extreme care in the location of the waste depository.
- o. To avoid strains or more serious injury, take care when lifting heavy items. Obtain assistance when necessary.
- p. Alertness and common sense in the performance of all work operations will go a long way toward the goal of eliminating accidents and injuries.
- q. When hands must be put in detergent solutions, wear oil- and chemical-resistant gloves (S-2004) to avoid the possibility of detergent allergy.
- r. Provide maximum ventilation possible when working with solvent-type floor finishes.
- s. Cleaning employees shall keep a supply of and use Forms 4851, *Correction Needed*, to immediately report hazardous conditions which they are not qualified to correct. Use this form also to report unsanitary conditions not in an employee's jurisdiction.

PART III

FLOORING TYPES AND MAINTENANCE

A. INTRODUCTION

1. Post office structures often have many different types of flooring in a single building and each type has a different cleaning procedure.
2. Considerable damage is caused to floors and floor coverings by cleaning personnel who fail to understand the nature of things they care for.
3. The purpose of this part is to give a nontechnical background on the composition of floors, the effects of different kinds of cleaners and preservatives on floors, and the proper procedures that must be observed in cleaning and maintenance of different flooring materials.
4. Specific techniques for the various phases of floor care are described in part IV.

B. RESILIENT TILE FLOORS

1. TYPES

There are six types of resilient floors:

- a. Asphalt tile.
- b. Rubber tile.
- c. Bituminous mastic.
- d. Asphalt plank.
- e. Vinyl and vinyl asbestos tile.
- f. Linoleum.

2. CHARACTERISTICS

a. *Asphalt Tile*

- (1) Asphalt tile is a mixture of asbestos fibers, lime rock, inert fillers, and colored pigments with an asphalt or resin binder. The tile is very brittle and, like linoleum, is bonded to the floor with mastic either directly or over a layer of felt. Sometimes a plywood subflooring is used to provide a smooth surface.
- (2) Most *soaps* contain materials that form an emulsion when they come in contact with the component parts of the asphalt tile which weakens the tile. That is why a synthetic liquid detergent which does not contain soap is used. *Water* seeping between seams can loosen the binding between the tiles and subfloor. Use water spar-

ingly and remove immediately during cleaning operations.

- (3) *Solvents* and *oils* also attack asphalt tile, causing it to break down. NEVER use solvent-type liquid waxes and cleaners or solvent paste wax. Use a water emulsion resin finish (C-1840), which is compatible with resilient tile floors, (including bituminous mastic and asphalt plank) that also provides an added measure of safety underfoot.

b. *Rubber Tile*

Rubber tile, sometimes containing asbestos fibers, is colored by mineral pigments. Rubber tile is seriously affected by *oils* and *solvents*, *strong soaps*, and *alkalies*.

c. *Bituminous Mastic*

- (1) A mastic floor is composed of asphalt, portland cement, paving sand, and coarse mineral aggregates, such as grit, gravel, and crushed stone.
- (2) It can be damaged by *oils*, *grease*, *solvents*, *strong soaps*, and *alkalies*.

d. *Asphalt Plank*

- (1) Asphalt plank is composed of high melting point asphalt, mineral fillers, asbestos, and organic fibers. It can be damaged by *oils*, *grease*, *solvents*, *strong soaps*, and *alkalies*.
- (2) It is more porous than asphalt tile; therefore take care in its maintenance, promptly removing water to minimize damage caused by seepage between tiles.

e. *Vinyl and Vinyl Asbestos Tile*

- (1) Vinyl tile is a compound of inert nonflammable, odorless, nontoxic resins, having a thermo-plastic quality, which is compounded with other filler and stabilizing ingredients. Vinyl asbestos is comparable to asphalt tile except that vinyl-type resins are used as a binder instead of asphalt.
- (2) Both of these materials are resistant to water, acids, alkalies, grease, and oil. They can be *damaged* by seepage of water between the tiles which loosens them from the subflooring.
- (3) New vinyl and vinyl-asbestos floors are coated with a silicone which resists wetting. These floors may need dry buffing with synthetic fiber scrubbing pads (C-1862) to remove surface silicones before applying a water emulsion resin finish.

f. *Linoleum*

- (1) Linoleum is a mixture of linseed oil, resins, and ground cork pressed upon a burlap backing, *or* a mixture of wood fibers, linseed oil, and resins attached to a felt backing.
- (2) Both the backing and the adhesive that binds the linoleum to the subfloor are susceptible to *water* damage. Water seeps around the edges or through the cracks and attacks the backing, loosening the linoleum from the floor. This results in curling of edges and eventual destruction of the floor surface. Therefore, keep the use of water on linoleum to an *absolute minimum*. Flooding

the surface with water is *positively prohibited*. When using water, wash a small area at a time, so that the water can be picked up quickly, thereby reducing the possibility of damage.

- (3) Linoleum is also highly susceptible to *alkali* damage. Alkali will remove the linseed oil binder, drying out the floor, causing it to become brittle and crack.

3. MAINTENANCE OF RESILIENT TILE FLOORS

a. *Initial Preparation of Resilient Tile Floors*

- (1) Machine scrub with synthetic liquid detergent, (C-1460D) and household ammonia; rinse and allow to dry.
- (2) Apply *two* coats water emulsion resin floor finish (C-1840) and allow to dry thoroughly before opening to foot traffic. DO NOT buff.
- (3) Extremely porous floors may require additional coats of water emulsion floor finish before developing an acceptable gloss.

b. *Daily Maintenance of Resilient Tile Floors*

- (1) Dry sweep with treated dusting cloth or mop.
- (2) When floor conditions indicate, or at least once a week, damp mop or wet mop with synthetic liquid detergent (C-1460D).

c. *Periodic Maintenance of Resilient Tile Floors*

- (1) Damp mop or wet mop with synthetic liquid detergent (C-1460D) and add one coat of water emulsion resin floor finish (C-1840) *in areas of heavy wear only*. Do not coat the entire floor area; this technique is designed to *patch* traffic lanes only.
- (2) An alternative to (1) above is to prepare a solution of 7½-ounces water emulsion floor finish (C-1840), 7½-ounces water and 1-ounce synthetic liquid detergent (C-1460D) and use the 'spray buffing' technique. See IVA9.
- (3) Use *initial preparation* procedure (see IIIB3a) only when the overall dirt level imbedded in the floor requires stringent measures. Proper preparations and daily maintenance will hold this necessity to an absolute minimum.

d. *Precautions in Maintaining Resilient Tile Floors*

- (1) Use of too much detergent in cleaning solutions on floors, which have been treated with water emulsion resin finish, will tend to soften the resin film. Subsequent foot traffic will break the film's bond to the floor and create an highly objectionable and slippery powdering condition. When this occurs, refinish with the *initial preparation* procedures in IIIB3a. NEVER add ammonia to liquid detergent solutions when damp mopping or wet mopping.
- (2) Reserve one mop for applying water emulsion resin finish and use it for nothing else. Identify it by marking the mop handle. Wash out thoroughly with clear water after each use.

- (3) Do not pour unused water emulsion resin finish back into original container as it will contaminate the fresh supply. Use a well-marked, clean container of the same type as the original for storage of excess material.

C. NONRESILIENT TILE FLOORS

1. TYPES

There are four types of nonresilient floors:

- a. Terrazzo.
- b. Marble and travertine.
- c. Ceramic and quarry tile.
- d. Concrete

2. CHARACTERISTICS

a. *Terrazzo*

- (1) Terrazzo is made of marble chips set in a mixture of portland cement. The floor surface is highly polished and easy to clean. A terrazzo sealer protects the floor from penetration by spillage and from wear by foot traffic.
- (2) A new terrazzo floor may appear dull because of the formation of deposits of mineral salts. This is caused by the curing of the cement and will clear up easily through routine maintenance.
- (3) *Strong alkalies, acids, soaps, and scouring powders* are harmful to terrazzo.

b. *Marble and Travertine*

- (1) Marble and travertine are natural stone materials that have been polished and laid to form a smooth floor.
- (2) *Strong soaps and cleaners* enlarge the pores of this stone and cause it to absorb dirt. Never use scouring powder.

c. *Ceramic Tile and Quarry Tile*

Ceramic tile is composed of clay mixed with water and fired in a kiln, whereas quarry tile is a natural stone. Both ceramic tile and quarry tile provide a smooth impervious surface which is not damaged by plain water.

d. *Concrete*

Concrete floors are made from a mixture of portland cement, sand and gravel or crushed rock. Concrete floors are somewhat porous; therefore, do not use *strong soaps, acids and alkalies* because they cause chipping and also remove the sealant.

3. MAINTENANCE OF NONRESILIENT TILE FLOORS

a. *Initial Preparation of Nonresilient Floors*

(1) *Scrubbing—All floors*

Machine scrub with synthetic liquid or powdered detergent, item C-1460A or D. Rinse and allow to dry thoroughly.

(2) *Sealing*

(a) *Terrazzo only*

Seal with terrazzo sealing compound (C-1845). Allow to dry and buff.

Note: See alternate method using concrete sealing compound (C-1849) in IVB.

- (b) Concrete only:
Seal with concrete sealing compound (C-1849).
Allow to dry.

b. *Daily Maintenance of Nonresilient Floors*

- (1) Dry sweep with treated dusting cloth or mop.
- (2) Damp mop or wet mop with either synthetic liquid detergent, (C-1460D) or synthetic powdered detergent (C-1460A) if floor conditions indicate.

c. *Periodic Maintenance of Nonresilient Floors*

(1) *Terrazzo only:*

Damp mop, wet mop or machine scrub with synthetic detergent (either powder or liquid C-1460). Rinse and add one very thin coat of terrazzo sealing compound (C-1845) in areas of *heavy wear only*. Do NOT coat the entire floor area; this technique is designed to *patch* traffic lanes only. Buff sealing compound with polishing brush, steel wool, or synthetic polishing pad.

If alternate method of *initial preparation* was followed using concrete sealing compound (C-1849), damp mop with synthetic liquid detergent (C-1460D). Rinse and add one coat of concrete sealing compound (C-1849) in areas of *heavy wear only*. Do NOT coat the entire floor area; this technique is designed to *patch* traffic lanes only.

(2) *Concrete only:*

Damp mop or wet mop with synthetic liquid detergent (C-1460D). Rinse and add one coat of concrete sealing compound (C-1849) in areas of *heavy wear only*. Do NOT coat the entire floor area; this technique is designed to *patch* traffic lanes only.

d. *Precautions in Maintaining Nonresilient Tile Floors*

Never use *acid solutions* on nonresilient floors as they cause permanent damage to the surfaces.

D. WOOD FLOORS AND CORK FLOORS

1. CHARACTERISTICS

a. *Wood Floors*

- (1) The most common wood floor found in post offices is maple. It is, along with oak, known as hard wood and is more resistant to water and wear than soft wood such as pine.
- (2) Maple is a close-grained wood with very little apparent difference between the hard and soft layers of wood.
- (3) Oak and pine have alternate layers of hard and soft materials and are known as "open-grained" woods. The softer portion of wood grain is easily *damaged* by traffic and can be *eaten away* by strong *soaps and water*. This results in complete breakdown of portions of the surface. This not only shortens the life of the wood flooring, but creates a rough surface increasingly difficult to keep clean. Water absorbed by wood floors causes them to *warp* and this creates openings between the boards. Use a solvent-type combination cleaner and surface finish (C-1845) instead of water.

- (4) *Separated boards* permit the entry of dirt and additional moisture. Accumulated dirt holds water and causes boards to rot. Alternating contraction and expansion of wood because of warping and drying results in the *loosening* of floors from the subfloor. *Examples* can be seen in post offices located in high humidity areas where the finest parquet and block-on-end floors have buckled. Floors of wood can also be damaged by *oils and grease* which dissolve the natural binder holding the fibers together. This weakens the wood, causing it to crack and splinter. Heavy foot traffic, trucking, gouging by falling objects or the dragging of heavy objects across the wood floors cut the surfaces until they are no longer smooth. Floors so damaged by such harsh action are further damaged when exposed to water, oils, or grease.
- (5) A floor seal *protects* floors from moisture in the air and the wear of foot traffic and operational equipment. The maintenance program requires the **PRESERVATION AND RESTORATION** of the floor seal to protect the floors and provide a smooth surface which is easier to keep clean. The seal is preserved with cleaner-surface finish.

b. *Cork Floors*

- (1) Cork flooring consists of cork curlings and granulated cork compressed in molds. When properly installed, it is treated with a sealer and finished to obtain surface protection.
- (2) When the seal and finish are worn through, the floor becomes porous and subject to deterioration.
- (3) Cork floors are susceptible to damage from *water, oils, and grease*.

2. MAINTENANCE OF WOOD AND CORK FLOORS

a. *Initial Preparation of Wood Floors and Cork Floors*

For floors that have no seal and have a deep penetration of dirt and stains:

- (1) Sweep the floor with treated dusting cloth or mop.
- (2) Machine scrub the floor in small sections at a time with solvent type surface-renewer (C-1848), using synthetic fiber scrubbing pad (C-1862) or #3 steel wool. Pick up loosened dirt with string mop and continue scrubbing until all renewer is worked into the floor and is practically dry. DO NOT apply sealer until scrubbing is completed.
- (3) *First-class offices*: Seal Floor with polyurethane coating (C-1846C). Allow floor to dry completely (normally 3 to 4 hours). *Second- and third-class offices*: Seal floor with fast-drying penetrating seal (C-1846). Allow floor to dry completely (normally 2 to 3 hours).
- (4) Apply a thin coat of solvent-type cleaner-surface finish (C-1845). Let dry (not less than 30 minutes), and buff with synthetic polishing pad, steel wool, or polishing brush.

b. *Daily Maintenance of Wood and Cork Floors*

- (1) Sweep with treated dusting cloth or mop.

- (2) Damp mop with a mop which has been *tightly* wrung out only if treated sweeping will not remove dirt.
- c. *Periodic Maintenance of Wood and Cork Floors*
- (1) Machine scrub with solvent-type cleaner-surface finish (C-1845) applied liberally in small sections. Pick up excess with string mop; allow to dry (not less than 30 minutes). Buff with synthetic polishing pad, steel wool or polishing brush. DO NOT coat the entire floor area; this technique is designed to *patch* traffic lanes only as initial finish wears off and the floor becomes dirty.
 - (2) Floors which have not been properly maintained will lose not only the surface finish but also the seal which was applied initially. They become dirty readily, stain, and absorb liquids slowly. Should this occur, use the *initial preparation* procedure in IID2a.
- d. *Precautions in Maintaining Wood and Cork Floors*
- (1) Never use so-called *floor oils* as they are neither a floor seal nor a floor finish. They leave a film and soften the wood fibers. When used frequently, they seep into the floors and create a fire hazard.
 - (2) Mops used in any of the wood-maintaining procedures should be washed in a solution of warm water and powdered synthetic detergent (C-1460), 4 ounces per gallon of water, before the material dries and hardens in the mop strands.
 - (3) When using a floor machine with a vacuum attachment, disconnect the vacuum before beginning any scrubbing operation of freshly-laid material.
 - (4) *Special Note:*
SOLVENT TYPE MATERIALS ARE FLAMMABLE.
 Therefore take these precautions:
 - (a) Check the floor machine for frayed cords, loose wiring, defective ground and defective plugs **BEFORE** connecting to an electrical outlet. **DO NOT USE** if there are any defects. Be sure that the machine switch is in *off* position before connecting to outlet.
 - (b) Keep the solvent tightly capped except when pouring.
 - (c) **DO NOT SMOKE** when using these products.
 - (d) Place steel wool pads or rolls used in solvent scrubbing in fireproof metal containers and remove promptly from the building.
 - (e) Keep applicators or mops used to apply the solvent in fireproof metal containers until laundered.
 - (f) Solvent materials are very slippery until dry. Protect areas from traffic with *Wet Floor* signs and plastic barrier ropes during cleaning and buffing operations.
 - (5) Do not return leftover materials to their original containers as they will contaminate the fresh supply. Place leftover materials in the same type (construction) of container in which the original material was received. Keep tightly capped except when pouring. Mark container as to the contents and use this first at the next cleaning job.

e. *Wood Floors Requiring Refinishing*

- (1) Floors in need of refinishing, that is sanding and resealing, will show some or all of the following conditions:
 - (a) Rotting.
 - (b) Splintering.
 - (c) Warping.
 - (d) Separation of the strips or blocks.
 - (e) Cupping from excessive wear.
 - (f) Buckling.
- (2) In Government-owned buildings, send requests for refinishing of such floors to General Services Administration.
- (3) In leased buildings, send requests to the lessor under existing procedures.

PART IV

CLEANING METHODS AND APPLICATION METHODS

A. CLEANING METHODS

1. POLICING

The policing of floor areas restores the appearance of cleanliness and order. It removes litter, butts, gum, spillages, and the like. It will not give the same results as sweeping or other floor cleaning operation. Tools needed include: pickup pan, toy corn broom, supply cart, putty knife (for gum removal), cloth or mop (for spillages) and plastic spray bottle with synthetic liquid detergent solution. Tools needed will vary as shown in the examples below:

- a. A toy broom or short-handled small brush with pickup pan may be adequate for lobby and corridor policing.
- b. A portable supply cart is needed in policing a workroom area when emptying waste receptacles picked up in the area.
- c. The policing of swing-room areas requires a clean damp cloth, portable supply cart, pickup pan, etc.

2. DRY MAINTENANCE

Dry maintenance minimizes the use of water or solvents in floor cleaning. All surface dirt must be completely removed and not pushed from one location to another. Treated sweeping mops and treated sweeping cloths remove surface dirt and provide adequate dust control. When dry maintenance does not accomplish the desired result, use damp mopping. Use scrubbing only as a last resort.

3. SWEEPING—INTERIOR SURFACES

a. Treated Sweeping

- (1) Use treated sweeping on all dry interior floor surfaces. Use hair brushes, fiber brooms, and straw brooms sparingly, if at all, and then chiefly on outside surfaces. **DO NOT USE** sweeping compounds on any surface. Absorbent compounds (not sweeping compounds) may be used to remove oil and grease. Use of treated sweeping procedures will provide effective dust control by removing the soil and not scattering it or pushing it around. Also, it will provide a higher cleaning quality level and reduce the frequency of other cleaning operations.
- (2) Use sweeping cloths and mops which are impregnated with a compound that picks up and holds the soil and dirt. Use each of these with a sweeping tool, the frame

of which is equipped with a swivel-head permitting complete maneuverability of the tool.

- (3) Use sweeping cloths for sweeping smooth floors in offices and in other areas where their use is compatible with the area's activity and equipment. (Also, use them for hand dusting other smooth surfaces such as furniture, fixtures, distribution cases, walls, ceilings, overhead pipes, ducts, and conveyor housings.) When dusting does not saturate the cloth, attach it to the sweeping tool and use for sweeping. However, when the cloths become so saturated with soil that they leave a streaked surface, replace them with a clean cloth; do not shake out and keep in use. Treated cloth rental service is available in most sections of the country. (See VIIB.) When unavailable, obtain disposable treated cloths (C-1853) and sweeping tools (C-1859) from supply center.
- (4) Use treated sweeping mops on all rough surfaces and on smooth surfaces where the accumulation of litter stops effective use of sweeping cloths. Treated mop rental service is also available in most sections of the country. When not available, obtain handles (C-1841), mopheads (C-1842), and mop treatment (C-1843) from supply center. (See VIIA (23), (25), and (29) and VIIB.)
- (5) Use these procedures for preparing and caring for mopheads obtained from supply centers:
 - (a) Treat the mopheads by immersing them in mop treatment (C-1843) until they are completely saturated. Prepare the solution as directed on the container.
 - (b) Remove mopheads and thoroughly wring out by squeezing them in a mop wringer.
 - (c) Hang mopheads in a ventilated area to dry. After 18 to 24 hours, they will be ready for use. DO NOT use mopheads if they are wet enough to leave streaks on the floor.
 - (d) When available, obtain the services of an industrial laundry to wash and retreat the mopheads. *Offices must not set up their own washing procedures.*
 - (e) In small offices where industrial laundry service is not available, remove excess dirt from mopheads with a vacuum cleaner or by rubbing over a grill. Lightly spray with item C-1843 and then hang to dry to obtain additional service. When this method is no longer effective, replace with new mopheads.

b. *Standard Method*

(1) *Equipment*

- (a) Treated sweeping cloth or treated sweeping mop with handle and frame (rented or obtained from supply center).
- (b) Pickup dust pan (C-923B) and toy broom (C-1104B).
- (c) Container for sweepings.

(2) *Method*

Sweep floors daily using the appropriate piece of equipment depending on the condition of floor surfaces. For general use, use treated mops, 24" frame size, with a 37" mophead (C-1842B). For aisles and open areas, use the 36" frame size with a 49" mophead (C-1842C); for stairs or tight areas, use the 18" frame size with a 31" mophead (C-1842A). Keep the treated sweeping mophead, cloth or treated nonwoven fabric (C-1853) flush to the floor at all times. Sweep with a figure 8 motion. Walk backwards, using the lower wrist to pivot the sweeping head at the completion of each side stroke, so as to maintain the leading edge position in the sweeping direction. By using the leading edge, it is possible to carry along small objects while sweeping. When objects accumulate at the leading edge to an unmanageable amount, temporarily push them to one side and continue sweeping. Pick up these objects in a dust pan and place them in a waste receptacle. The universal swivel head on the sweeping tool permits use of the leading edge principle in the sweeping of hard-to-get-at places underneath separation cases, etc.

4. SWEEPING—EXTERIOR PAVED SURFACES

- a. Manually sweep paved areas, such as sidewalks, driveways, and parking areas, with a fiber brush (C-1108). Where the size of the area justifies it, use a pedestrian-type power vacuum sweeper or rider-type power sweeper.
- b. When using power driven equipment, be alert to pedestrian and vehicular traffic. Keep children away from equipment. Do not leave equipment unattended while the motor is running and do not leave ignition key in equipment when unattended.

5. DAMP MOPPING

a. *When to Use*

Use damp mopping when specified in the maintenance procedures in part III. Also use damp mopping for policing areas where water accumulates during bad weather, around vending machines, and for cleaning areas where spillages occur. Give special attention to areas around food and beverage vending machines to keep vermin under control. See Part V, *Removing Stains From Floors*, for removing stubborn food and beverage spillage.

b. *Standard Method*

(1) *Materials*

Liquid synthetic detergent (C-1460D).

(2) *Equipment*

- (a) 1 wet mop (C-1121D or E) complete with handle (C-1121C).
- (b) 1 mopping outfit, consisting of:
 - 1 wringer C-1122A).
 - 1 truck (C-1122B).
 - 2 buckets (C-1122 C or D).
- (c) *Wet Floor* sign (C-1800A).

(3) *Steps*

- (a) Fill each bucket about three-fourths full with cold water and place the wringer on one of the buckets. Add *no more than* one cup liquid synthetic detergent to each bucket of water.
- (b) Dip mop in water and wring out until almost dry. Then, using a figure 8 motion and turning the mophead over every three or four strokes, damp mop the floor until the mop begins to streak. Rinse and wring out before continuing.
- (c) Repeat until the entire area has been mopped.
- (d) When the water in one bucket becomes dirty, move the wringer to the other bucket and use the clean water. Change water in both buckets as needed.

6. WET MOPPING—ALL FLOORS EXCEPT WOOD AND CORK

a. *When to Use*

Wet mopping is required when accumulated dirt must be loosened and removed by applying an appropriate soil suspending solution. A proper dry maintenance program (IVA2) reduces the need for frequent wet mopping.

b. *Standard Method*

(1) *Materials*

- (a) Liquid synthetic detergent (C-1460D) for linoleum, asphalt tile, rubber tile, vinyl tile, and other resilient floors.
- (b) Fine steel wool (Grade 00).

(2) *Equipment*

- (a) Treated sweeping equipment.
- (b) 2 wet mops (C-1121D or E), complete with handles (C-1121C).
- (c) 1 mopping outfit, consisting of:
 - 1 wringer (C-1122A).
 - 1 truck (C-1122B).
 - 2 buckets (C-1122C or D)
- (d) Putty knife (C-953A).
- (e) *Wet Floor* signs (C-1800).

(3) *Steps*

- (a) Sweep the area with treated sweeping equipment.
- (b) Remove gum and other substances stuck to floor with putty knife.
- (c) Prepare cleaning solution in one bucket using 6-ounces detergent to each gallon of water. Fill second bucket one-half full with cold water for rinsing. Place wringer on second bucket.
- (d) Dip first mop in cleaning solution and apply moderately to an area approximately 6' x 20'. Begin by dragging the mop parallel to and one inch away from baseboards. Then work in a figure 8 motion to the inner edges of the parallel *stripes* so as not to splash baseboards and walls. *Note:* Leave solution on floor for a few minutes.
- (e) Dip second mop in second bucket and wring out. Pick up cleaning solution, turning mophead frequently to get maximum absorption. Wring out in

the same bucket. When available, use a wet pickup vacuum to pick up the solution.

- (f) To remove stubborn spots, dip a small piece of fine steel wool, Grade 00 or synthetic pad, in the cleaning solution and squeeze to remove excess solution. Rub spots lightly to prevent damaging the floor finish.
- (g) Repeat until entire floor is mopped.

(4) *Precautions*

- (a) Don't flood the floor with cleaning solution.
- (b) Be sure to remove cleaning solution from baseboards.

7. HAND SCRUBBING—(DECK BRUSH)—ALL FLOORS EXCEPT WOOD AND CORK

a. *When to Use*

Use hand scrubbing when a floor machine is unavailable or for small areas where use of a machine is impractical.

b. *Standard Method*

(1) *Materials*

- (a) Liquid synthetic detergent (C-1460D) for linoleum, asphalt tile, rubber tile, vinyl tile, and other resilient floors.
- (b) Household ammonia (local purchase).
- (c) Fine steel wool (Grade 00).

(2) *Equipment*

- (a) Treated sweeping equipment.
- (b) Two wet mops (C-1121 D or E) complete with handles (C-1121C).
- (c) 1 deck scrub brush (C-1112) with handle (C-1112A).
- (d) 1 mopping outfit, consisting of:
 - 1 wringer (C-1122A).
 - 1 truck (C-1122B).
 - 2 buckets (C-1122C or D).
- (e) Wet pickup vacuum (C-1903C), if available.
- (f) Putty knife (C-593A).
- (g) *Wet Floor* signs (C-1800).

(3) *Steps*

- (a) Sweep the area with the treated sweeping equipment.
- (b) With putty knife, remove gum and other substances stuck to floor.
- (c) Prepare cleaning solution in one bucket using 6 ounces of detergent to each gallon of water. Add 8 ounces of household ammonia to a full bucket of detergent solution. Fill second bucket half-full with cold water for rinsing. Place wringer on second bucket.
- (d) Dip first mop in cleaning solution and apply moderately to an area approximately 6' x 20'. Begin by dragging the mop parallel to and one inch away from baseboards. Then work in a figure 8 motion

to the inner edges of the *stripes* so as not to splash baseboards and walls.

Note: Leave solution on floor for a few minutes.

- (e) Scrub this area with the deck brush to soften and remove all finish.
 - (f) Dip second mop into second bucket, wring out, and pickup cleaning solution. When available, use a wet pickup vacuum to pickup the solution.
 - (g) To remove stubborn spots, dip a small piece of fine steel wool, Grade 00 or synthetic pad, in the cleaning solution and rub lightly.
 - (h) Repeat until entire floor area is scrubbed.
- (4) *Precautions*
- (a) Do not flood the area.
 - (b) Do not splash water or cleaning solution on walls, baseboards, or furniture.

8. MACHINE SCRUBBING—ALL FLOORS EXCEPT WOOD AND CORK

a. When to Use

Use a machine when conditions permit and area is large enough.

b. Standard Method

(1) Materials

- (a) Liquid synthetic detergent (C-1460D).
- (b) Household ammonia (local purchase).
- (c) Fine steel wool (Grade 00).

(2) Equipment

- (a) Treated sweeping equipment.
- (b) Two wet mops (C-1121 D or E), complete with handles (C-1121 C).
- (c) Floor machine (C-1900) with scrubbing brush, steel wool pad (C-1831) or synthetic fiber scrubbing pad (C-1862).
- (d) 1 mopping outfit, consisting of:
 - 1 wringer (C-1122A).
 - 1 truck (C-1122B).
 - 2 buckets (C-1122 C or D).
- (e) Wet pickup vacuum (C-1903A), if available.
- (f) Putty knife (C-953A).
- (g) *Wet Floor* sign (C-1800A).

(3) Steps

- (a) Pick up trash and loose material.
- (b) Sweep the area with treated sweeping equipment.
- (c) With putty knife, remove gum and other substances stuck to floor.
- (d) Prepare cleaning solution in first bucket using 6 ounces of detergent to each gallon of water. Add 8 ounces of household ammonia to a full bucket of detergent solution. Half fill second bucket with cold water and place wringer on second bucket.
- (e) Dip first mop in cleaning solution and apply moderately to an area approximately 6' x 20'. Begin by

dragging the mop parallel to baseboards. Then work in a figure 8 motion to the inner edges of the *stripes* so as not to splash baseboards and walls.

- (f) Let solution stand for a few minutes, then scrub with floor machine and steel wool or synthetic fiber scrubbing pad.
 - (g) Dip second mop in second bucket, wring out, and pickup cleaning solution. Rinse and wring out mop often to keep it absorbent. When available, use wet pickup vacuum.
 - (h) To remove stubborn spots, dip a small piece of fine steel wool, Grade 00, or synthetic pad in the cleaning solution and squeeze to remove excess solution. Rub spots lightly to prevent damaging the floor.
 - (i) Repeat the above steps until the entire floor has been scrubbed.
- (4) *Precautions*
- (a) Do not flood the area.
 - (b) Do not splash water or cleaning solution on walls, baseboards, or furniture.

9. SPRAY BUFFING—ALL FLOORS EXCEPT WOOD AND CORK

a. *When to Use*

Use spray buffing for periodic maintenance of aisles, corridors and other traffic lanes to maintain constant high appearance level of *initially prepared* floors without again resorting to *initial preparation* procedure. This is especially beneficial in front of doorways with heavy traffic.

b. *Standard Method*

(1) *Materials*

- (a) Liquid synthetic detergent (C-1460D)
- (b) Water emulsion resin finish (C-1840)

(2) *Equipment*

- (a) Treated sweeping equipment
- (b) Floor scrubbing machine with synthetic fiber scrubbing pad (C-1862)
- (c) Plastic spray bottle (C-1133) or mechanical spray attachment (fogging device) for floor machine (local purchase)

(3) *Steps*

- (a) Sweep the area with treated sweeping equipment.
- (b) Mix 7½ ounces of water emulsion floor finish with 7½ ounces of water and one ounce of liquid detergent for use in plastic spray bottle or mechanical spray attachment.
- (c) *Fog* the spray solution onto the floor two-to-three feet ahead of the floor machine.
- (d) Immediately buff the fogged area with floor machine and synthetic fiber scrubbing pad.
- (e) Continue steps (c) and (d) until the area has been completed.

(4) *Notes:*

- (a) Spray buffing is effective only on floor finishes in

which dirt or black marks are lightly imbedded. Heavy dirt accumulations require *initial preparation* procedures.

- (b) Spray should not be more than a mist applied to the floor. Over-wetting results in streaking and an uneven appearance of the surface.

B. APPLICATION METHODS

1. STANDARD METHOD FOR APPLICATION OF WATER EMULSION RESIN FINISH (C-1840)

a. Materials

Water emulsion resin finish (C-1840).

b. Equipment

- (1) 1 wet mop (C-1121 D or E) with handle (C-1121 C).
- (2) 1 mop bucket (C-1122 F).
- (3) 1 wringer (C-1122E).
- (4) *Wet Floor* signs (C-1800).

c. Steps

- (1) As needed, perform wet mopping (IVA6b), complete machine scrubbing (IVA8b) or hand scrubbing (IVA7b) operations. While doing this, allow the mophead, used for the *first* time for resin finish, to soak in water to remove preservative oils from the strands. An oil-free mop allows better absorption of finish into the strands.
- (2) Permit the floor to dry thoroughly before proceeding.
- (3) Pour the finish into the bucket to a depth of one inch.
- (4) Soak the mop in the finish and wring out.
- (5) Apply a thin coat of finish with a side-to-side motion. Begin by dragging mop parallel to baseboards. The mop should glide easily; a *drag* indicates a need for more finish in the mop. Turn mophead over frequently to equalize flow of finish.
- (6) Allow the finish to dry thoroughly (at least 30 minutes) and then apply a second thin coat. Extremely porous floors may require additional coats before developing an acceptable gloss.

Note: Resin finish is self-polishing; therefore, **DO NOT** buff at any time.

d. Precautions

- (1) Excess use of detergent in damp mopping or wet mopping during subsequent maintenance will tend to soften the resin film and foot traffic may then cause a *powdering* condition. When this occurs, use the scrubbing procedure in IVA7b or IVA8b.
- (2) Reserve one wet mop solely for use with resin finish. Mark handle for identification.

2. STANDARD METHOD FOR SEALING TERRAZZO FLOORS

(See Alternate Method in IVB3)

a. Material

Terrazzo sealing compound (C-1845) (same as *Cleaner-Surface Finish*).

b. *Equipment*

- (1) Applicator with lamb's wool pad (C-1844) or mop, cellulose, 24 ounce (C-1121 D).
- (2) Shallow pan (local purchase) for sealer, or bucket (C-1122 C or D) for sealer.
- (3) Floor machine with polishing brush, synthetic fiber polishing pad (C-1863) or steel wool pad (C-1831).
- (4) *Wet Floor* signs (C-1800A).

c. *Steps*

- (1) Perform complete machine scrubbing (IVA8b) or hand scrubbing (IVA7b) procedure.
- (2) Pour about two inches of sealer into shallow pan or bucket.
- (3) Dip the clean applicator or mop into the sealer, rubbing off excess on edge of pan. Apply to the floor in a very thin, even coat.
- (4) Allow the floor to dry thoroughly (about 30 minutes to 1 hour depending on humidity).
- (5) Buff the floor using the floor machine with polishing brush, synthetic fiber polishing pad, or steel wool.
- (6) When a floor machine is unavailable, buff the floor by hand with an applicator and a clean lamb's wool pad.

Note: If floor is slippery, use synthetic scrubbing pad (C-1862) or steel wool to remove excessive coating.

3. STANDARD METHOD FOR SEALING CONCRETE FLOORS

(Also an Alternate Method for Sealing Terrazzo Floors)

a. *Material*

Concrete sealing compound (C-1849).

b. *Equipment*

- (1) Wet mop (C-1121 D or E) and handle (C-1121C).
- (2) Bucket for sealer (C-1122F).
- (3) Mop wringer (C-1122E).
- (4) Treated sweeping equipment.
- (5) *Wet Floor* signs (C-1800A).

c. *Steps*

- (1) Perform machine scrubbing (IVA8b) or hand scrubbing (IVA7b) operation.
- (2) Dip clean mop into sealer and spread liberally on floor, using a figure 8 motion. Do not allow sealer to *puddle*.
- (3) Allow the floor to dry thoroughly (about 30 minutes to 1 hour, depending on humidity).
- (4) Add second coat, if needed, to provide smooth surface.

Note: When this method is used on terrazzo which has been maintained with C-1845, a thorough floor scrubbing is needed to assure complete removal of C-1845. C-1849 and C-1845 are not compatible with one another. C-1849 will not bond to C-1845. An attempt to make it do so will result in powdering of the seal and a slippery floor.

4. MACHINE SCRUBBING (WOOD OR CORK) FLOORS WITH SOLVENT TYPE SURFACE-RENEWER (C-1848)

a. *Materials*

Solvent type surface-renewer (C-1848).

b. *Equipment*

- (1) Treated sweeping equipment.
- (2) Applicator with lamb's wool pad (C-1844A).
- (3) Shallow pan (local purchase) for surface-renewer.
- (4) Floor machine with steel wool pad (C-1831) or synthetic fiber scrubbing pad (C-1862).
- (5) Putty knife (C-953A).
- (6) Wet mop (C-1121 D or E) with handle (C-1121C).
- (7) Mop bucket (C-1122 C or D) with wringer (C-1122A).
- (8) *Wet Floor* sign (C-1800 A).

c. *Steps*

- (1) Sweep the area with treated dust cloth or mop.
- (2) Use putty knife to remove chewing gum or other substances stuck to the floor.
- (3) Pour surface-renewer into shallow pan to a depth of one inch.
- (4) Dip the applicator into the renewer and apply liberally on an area approximately 5' x 10'. Allow it to stand for a few minutes.
- (5) Scrub the area, using the floor machine with steel wool pad or synthetic fiber scrubbing pad.
- (6) Pickup loose dirt with the wet mop and continue scrubbing until all the renewer is worked into the floor and it is practically dry.
- (7) Repeat steps in paragraphs (4) through (6) until the entire floor is completed.
- (8) When dry, sweep the entire area with treated dust cloth or treated dust mop to remove matter such as steel wool particles.

5. SEALING WOOD OR CORK FLOORS WITH POLYURETHANE COATING (C-1846 C)

(FIRST CLASS OFFICES ONLY)

a. *Material*

- (1) Polyurethane coating (C-1846C).
- (2) Solvent-type cleaner-surface finish.

b. *Equipment*

- (1) Applicator with lamb's wool pad (C-1844).
- (2) Shallow pan (local purchase) for sealer.
- (3) Floor machine with synthetic fiber polishing pad (C-1863) or polishing brush.
- (4) Mop bucket (C-1122C or D) with wringer (C-1122A).
- (5) Wet mop (C-1121D or E) with handle (C-1121C).
- (6) Wet floor signs (C-1800A).

c. *Steps*

- (1) Complete machine scrubbing (wood or cork) with solvent-type surface renewer as provided in IVB4.
- (2) Pour polyurethane coating into a shallow pan to a depth of approximately one inch. **PUT THE TOP BACK ON** the polyurethane container immediately.
- (3) Dip applicator into pan, rubbing off excess on edge of pan and flow the polyurethane on to an area 5' x 10'.

Do NOT *work the coating into the floor*. Do not allow the coating to puddle or ridge.

- (4) Repeat until the entire floor has been completed.
- (5) Allow floor to dry completely (normally 3 to 4 hours).
- (6) Different brands of polyurethane may specify directions which vary slightly with the above method. Follow specific directions on the container.
- (7) When the floor is completely dry, apply a *thin* coat of cleaner-surface finish with a wet mop. Let dry (not less than 30 minutes) and buff with synthetic polishing pad or polishing brush.

d. *Notes:*

- (1) *Maximum ventilation* must be provided in areas where polyurethane is being applied.
- (2) Polyurethane coating is an oil-free, moisture-curing formulation. Drying is quickened in a *humid* atmosphere. Humidity can be created when needed to accelerate drying of the coating by spraying a *fog* of water in the area after coating the floor.
- (3) Polyurethane coatings generally will not tolerate foreign substances on the floor to which they are applied. Machine-scrubbing preparation of the floor must be thorough and traffic must not be permitted on the floor after scrubbing. Failure to follow this instruction will result in an imperfect bond of the coating and subsequent cracking and lifting of the dried film.

**6. SEALING WOOD OR CORK FLOORS WITH FAST-DRYING
PENETRATING SEAL (C-1846)**

(SECOND AND THIRD CLASS OFFICES ONLY)

a. *Material*

- (1) Fast-drying penetrating seal (C-1846).
- (2) Solvent type cleaner-surface finish (C-1845).

b. *Equipment*

- (1) Applicator with lamb's wool pad (C-1844).
- (2) Shallow pan (local purchase) for sealer.
- (3) Floor machine with synthetic fiber polishing pad (C-1863) or polishing brush.
- (4) Mop bucket (C-1122 C or D) with wringer (C-1122A).
- (5) Wet mop (C-1121 D or E) with handle (C-1121C).
- (6) *Wet Floor* signs (C-1800 A).

c. *Steps*

- (1) Complete machine scrubbing (wood or cork) with solvent type surface-renewer as provided in IVB4.
- (2) Pour fast-drying penetrating seal into a shallow pan to a depth of approximately one inch.
- (3) Dip applicator into pan, rubbing off excess on edge of pan. Apply the sealer to an area 5' x 10', smoothing it into the floor. Do not allow sealer to puddle or ridge.
- (4) Repeat until the entire floor has been completed.
- (5) Allow floor to dry completely (normally 2 to 3 hours).
- (6) Different brands of floor seals may have specific directions which vary slightly with the above method. Follow specific directions on the container.

- (7) When the floor is completely dry, apply a *thin* coat of cleaner-surface finish, using a wet mop. Let dry (not less than 30 minutes) and buff with synthetic polishing pad or polishing brush.

7. APPLYING SOLVENT TYPE CLEANER-SURFACE FINISH (C-1845) TO RENEWED WOOD OR CORK FLOORS

a. Materials

Solvent type cleaner-surface finish (C-1845).

b. Equipment

- (1) Wet mop (C-1121 D or E) with handle (C-1121C).
- (2) Mop bucket (C-1122 C or D) and wringer (C-1122A).
- (3) Floor machine with synthetic fiber polishing pad (C-1863), polishing brush, or steel wool (C-1831).
- (4) *Wet Floor* signs (C-1800).

c. Steps

- (1) Complete machine scrubbing with solvent-type surface renewer as provided in IVB4.
- (2) Shake container and pour cleaner-surface finish into mop bucket.
- (3) Dip mop into the liquid and wring out excess.
- (4) Apply liquid to the floor in a *thin* coat, redipping and wringing out as necessary until the entire floor is covered.
- (5) Allow the entire floor to dry thoroughly (not less than 30 minutes). Then buff with a floor machine, using the synthetic polishing pad, polishing brush, or steel wool.

8. MACHINE SCRUBBING (WOOD OR CORK) FLOORS WITH SOLVENT TYPE CLEANER-SURFACE FINISH (C-1845)

a. Materials

Solvent type cleaner-surface finish (C-1845).

b. Equipment

- (1) Treated sweeping equipment.
- (2) Putty knife (C-953A).
- (3) 2 wet mops (C-1121 D or E) with handles (C-1121C).
- (4) 2 mop buckets (C-1122 C or D) with 1 wringer (C-1122A).
- (5) Floor machine with synthetic fiber scrubbing pad (C-1862) or steel wool pad (C-1831).
- (6) Synthetic fiber polishing pad (C-1863) or polishing brush.
- (7) *Wet Floor* sign (C-1800).

c. Steps

- (1) Sweep the area with treated sweeping cloth or mop.
- (2) Remove chewing gum or other substances from floor with putty knife.
- (3) Shake can thoroughly and pour cleaner-finish into one bucket.
- (4) Dip a mop into the liquid and hold it over the bucket until liquid stops dripping.
- (5) Apply liquid liberally on an area approximately 5' x 10'. Allow it to stand for a few minutes to loosen dirt.

- (6) Scrub the floor with a floor machine using a synthetic fiber scrubbing pad or steel wool pad.
- (7) Pick up the loose dirt from the floor with the other wet mop and wring out, as needed, into the other bucket.
- (8) Repeat steps in paragraphs (4) through (7) until the entire floor is completed.
- (9) Allow the entire floor to dry thoroughly (not less than 30 minutes). Then buff with the floor machine, using either the synthetic fiber polishing pad, steel wool, or polishing brush.

9. RENOVATING ALKALI-DAMAGED LINOLEUM

a. *How to Recognize Alkali-Damaged Linoleum*

- (1) Linoleum floors damaged by strong alkalis *bleeding* the linseed oil binder can be recognized in one or all of the following ways:
 - (a) Color fading.
 - (b) Excessive absorption of resin emulsion floor finish.
 - (c) Cracking or *alligating*.
 - (d) Loss of resiliency.
- (2) These floors can be partially restored and their usefulness extended by treating with fast-drying penetrating seal (C-1846) as a replacement for the linseed oil removed.

b. *Materials*

- (1) Fast-drying penetrating seal (C-1846).
- (2) Resin emulsion floor finish (C-1840).

c. *Equipment*

- (1) Applicator with lamb's wool pad (C-1844).
- (2) Shallow pan (local purchase) for sealer.
- (3) Floor machine with scrub brush.
- (4) Grade No. 1 steel wool pad (local purchase) for floor machine.
- (5) Treated sweeping equipment.
- (6) Mop bucket (C-1122 C or D) with wringer (C-1122A).
- (7) Wet mop (C-1121D or E) with handle (C-1121C).
- (8) *Wet Floor* signs (C-1800A).

d. *Steps*

- (1) Complete machine scrubbing (IVA8b). Allow floor to dry a minimum of 3 hours.
- (2) Do not proceed until floor is *completely* dry as moisture interferes with the bonding and drying of the seal.
- (3) Dip applicator into pan and apply seal to floor liberally in an area 5' x 10'. Allow to stand for 5 minutes and move to a second area while waiting.
- (4) After 5 minutes, return to first area and smooth out seal already applied, picking up excess.
- (5) Repeat steps in paragraphs (3) and (4) until the entire floor is completed.
- (6) Allow floor to dry completely (at least 2 hours).
- (7) When floor is completely dry, use a Grade No. 1 steel wool pad under a floor machine to smooth off surface. This may produce a dulling effect.

- (8) Use treated sweeping equipment to remove residual dust.
- (9) Apply two thin coats of resin emulsion finish and maintain in the future as prescribed in IIIB3.

10. SNOW AND ICE REMOVAL

a. *Prompt Action*

Spread flake calcium chloride or calcium chloride pellets evenly. When snow and ice melt sufficiently, remove promptly to prevent refreezing. This is particularly important where there is pedestrian traffic, especially on steps and ramps.

b. *Melting Action*

Calcium chloride, either flakes or pellets, will melt ice faster than rock salt, particularly at temperatures below 25 degrees Fahrenheit. Flake calcium chloride causes melting from the top down but the pellets will cut through and undercut the ice. Rock salt also cuts through and undercuts in a similar manner but more slowly than calcium chloride.

c. *Special Note*

Chloride deposits tracked onto floors *use up* detergent solutions very quickly. In cleaning floors, perform a damp-mopping operation first to pick up as much of the tracked salt as possible. Then perform a wet-mopping operation to suspend and remove the residue.

d. *Precautions*

- (1) Use a scoop or shovel to spread material.
- (2) Keep hands as dry as possible. Wash after use and dry thoroughly.
- (3) Don't dump the material and raise a cloud of dust.
- (4) Do not use gloves because the powder sifting inside is hard to remove.
- (5) Keep clothing well buttoned. Don't expose parts of the skin unnecessarily. Do not wipe face with hands that have calcium on them.
- (6) If an employee's skin is constantly irritated when handling calcium chloride, refer him to a doctor.

PART V

REMOVING STAINS FROM FLOORS

A. GENERAL INSTRUCTIONS

1. The method recommended for removal of a stain may be effective on the stain but may be injurious to the floor. For instance, most solvents dissolve asphalt tile, acids etch marble and terrazzo, and strong alkalis destroy linoleum and cork and damage the grouting in ceramic tile. The chart in VB lists common stains found in public and work areas. Numbered references are made to a list of removal methods for specific stains in the chart in VC. A method specifically prescribed for one type of floor *SHALL NOT* be tried on another type floor because it will damage the floor.
2. Try the methods in sequence as they are listed in the three columns of the chart (VB) progressing to the next proposed method only if the first one listed does not work.
3. For example: In removing ink from an asphalt tile floor, try VC (1), synthetic liquid detergent and warm water. If this will not work, try VC (16) ink remover; if this won't work, try VC (4) oxalic acid in water.
4. Make a small test first to determine if a particular method will work. Begin at the outer edges and work toward the middle to prevent the spread of the stain.
5. When the method requires a poultice, apply it about one-half inch thick. Poultices, in drying, absorb moisture that has penetrated the stain and draws the stain out with the moisture.

B. STAIN REMOVAL CHART

Stain	Resilient Tile	Wood or Cork	Nonresilient Floors
a. Alcoholic beverages ..	1, 10, 4	1, 10, 4.....	1, 10, 5
b. Blood	11, 12.....	11, 12.....	11, 32
c. Candy	1 and 3	1 and 3.....	33
d. Chocolate	6	6	6
e. Coffee	7, 8, 9.....	7, 34, 9.....	7, 34, 9
f. Dyes	13, 14, 9.....	13, 14, 9.....	13, 5, 9
g. Fruit	2, 4.....	2, 4.....	2 and 15
h. Grease or oil	1	29	30
i. Ink	1, 16, 4, 17.....	1, 16, 4, 17.....	1, 21
j. Iodine	18, 19, 20	18, 19, 20.....	18, 19, 20
k. Lipstick	1 and 3, 4.....	1 and 3, 4.....	1 and 3, 5
l. Paint	1 and 3.....	4	31
m. Rust	22	22	22
n. Soft drinks	4	4	5
o. Soot	23, 1 and 3.....	23, 1 and 3.....	23, 1 and 3
p. Tar	24, 25, 26	24, 25, 26.....	24, 25, 26
q. Tobacco	27, 5, 9.....	27, 5, 9	27, 5, 9, 28
r. Urine	9, 5.....	9, 5.....	9, 5
s. Varsol	35	35	35

C. STAIN REMOVAL METHOD

PRECAUTIONS: Wear rubber gloves when working with these materials. Always pour acids *into* water. Wear face shield (S-2000) to protect eyes and face against splashing fluids. Wear chemical resistant gloves (S-2004) when working with materials marked with an asterisk (*)

Method	Stain
(1) Synthetic liquid detergent and warm-water	Alcoholic beverages, candy, grease or oil, ink, lipstick, paint, soot.
(2) Synthetic powdered detergent and warm water	Fruit.
(3) Grade 00 steel wool	
* (4) Tablespoon of oxalic acid in pint of water	Alcoholic beverages, fruit, ink, lipstick, soft drinks, paint.
* (5) Absorbent cloth soaked in hydrogen peroxide laid directly over stain; an ammonia-saturated cloth on top of this.	Alcoholic beverages, dyes, lipstick, soft drinks, tobacco, urine.
* (6) Use ammoniated alcohol: 9 parts denatured alcohol and one part stronger ammonia (26%).	Chocolate.
(7) Saturate an absorbent cloth with solution of one part glycerin and three parts water and lay over spot.	Coffee.
* (8) Apply a poultice made of one part chlorinated lime and three parts washing soda and calcium carbonate. Allow to stand until dry. <i>Do not use linoleum.</i> Use poultice of hydrogen peroxide and whiting.	Coffee.
(9) Poultice of abrasive powder and hot water.	Coffee, dyes, tobacco, urine.
* (10) Follow with denatured alcohol if necessary	Alcoholic beverages.
(11) Try cold clear water first, then add a few drops of ammonia.	Blood.
* (12) For old stains try 2 oz. salt and 2 drams formic acid in pint of water. Soak stain for an hour, then rinse and blot up with absorbent cloth.	Blood.
* (13) Try a chlorine bleaching agent	Dyes.
* (14) Apply solution of one tablespoon permanganate of potash to pint of water. When dry, apply solution of one tablespoon oxalic acid to pint of water.	Dyes.
(15) If rough spot results, rub with powdered pumice stone under a block of wood.	Fruit.
(16) Ink remover	Ink.
(17) If a brown stain remains, treat as a rust stain	Ink.
* (18) Apply ammonia	Iodine.
* (19) If stain is old or deep, apply ammonia-saturated cloth.	Iodine.
* (20) Poultice of denatured alcohol and calcium carbonate.	Iodine.
* (21) Poultice of two tablespoons sodium perborate in pint of water mixed into a paste of calcium carbonate.	Ink.
(22) Poultice of calcium carbonate mixed with one part sodium citrate crystals to six parts water added to an equal portion of glycerine. Allow to stand 2 to 3 days.	Rust
(23) Cover with salt or rub in calcium carbonate and rub off. Wash with synthetic detergent and water.	Soot.
(24) Poultice of synthetic powdered detergent and whiting.	Road tar.
(25) Stoddard solvent (varsol) on any floor <i>except</i> asphalt and rubber.	Roofing tar.
(26) Freeze to brittleness with dry ice. Scrape off	Roofing tar.
(27) Lemon juice in water	Tobacco.
(28) Equal parts alcohol and glycerine	Tobacco.
(29) Pour kerosene on spot. Soak for 5 minutes. Wipe dry with clean cloth. Wash with synthetic liquid detergent and water.	Paint.

STAIN REMOVAL METHOD—Continued

Method	Stain
(30) Pour Stoddard solvent (varsol) on spot. Rub with clean, soft cloth.	Paint.
(31) One pound synthetic powdered detergent in one gallon water. Scrub and rinse with clear water.	Paint.
(32) Wet spot with lukewarm water and sprinkle with powdered malt. Let stand an hour and rinse.	Blood.
(33) Use synthetic scrubbing pad and synthetic detergent.	Candy.
(34) Poultice of hydrogen peroxide and calcium carbonate.	Coffee.
(35) Poultice of synthetic powdered detergent	Varsol.

PART VI

CARE OF EQUIPMENT

A. IMPORTANCE OF CARE

The Department provides all equipment necessary to do the job. Proper care of this equipment will assure efficient operation and prolong the life of the equipment. It is most important that the following simple requirements for care of equipment be followed.

B. FLOOR MACHINES

1. Always tilt nonvacuum type machines back on handle and place brush on machine by hand. *Never* attempt to lock brush in place by placing machine over the brush and starting the machine. This will damage both the brush plate and brush shaft and create a vibration in the machine.
2. Always remove brushes from machines before storing. Dead weight on brushes will flatten bristles.
3. Use a damp cloth to wipe off machine cable and housing after each use.
4. Check switch, cable, plug, and ground wire for defects *before* storing. Have necessary repairs made immediately. Use Form 4707 "OUT OF ORDER" tag on all defective equipment.
5. Always empty vacuum bag on vacuum machines before storing.
6. Clean fan blades and fan housing before storing vacuum machines.

C. BATTERY-OPERATED COMBINATION SCRUBBER-VACUUMS

1. See Maintenance Handbook, Series MS-11, *Industrial Storage Batteries*, for complete maintenance instructions on batteries.
2. Do not smoke, light matches, or bring open flame into the area when battery is being charged.
3. Charge battery before storing equipment so it is ready for subsequent operation.

D. WET VACUUMS

After each use, empty the tank and wipe the inside clean with a damp cloth. Gradually, lines become clogged if not kept clean and suction is reduced accordingly.

E. BUCKETS AND WRINGERS

Rinse out after each use to prevent buildup of detergent and dirt.

F. WET MOPS

Rinse out thoroughly after each use. Dirty mops use up fresh detergent solutions and decrease the effectiveness of mopping operations. Eventually dirty mops *sour* and give off a highly objectionable odor.

G. DUSTING TOOLS

Store upright on handle or hang on wall. Storing face down on the floor will spread bristles on rental tools and reduce their efficiency.

H. STEEL WOOL PADS

Store wet pads to be used again with wet side up to avoid rusting.

I. SYNTHETIC PADS

Rinse out immediately after use. Hang up to dry.

PART VII

OBTAINING SUPPLIES

A. FROM SUPPLY CENTERS ON FORM 1580

	<i>Item No.</i>
(1) Applicators, lambs wool, complete with handle.	C-1844A
(2) Applicators, lambs wool, refills	C-1844B
(3) Bottles, plastic, sprayer head 8 ounce (for spot-cleaning with detergent solution).	C-1133
(4) Boots, rubber, knee length	S-2009
(5) Broom (for dust pan, pickup, C-923B) ..	C-1104B
(6) Brushes, deck, scrub, without handles ...	C-1112
(7) Brushes, floor sweeping, without handles.	C-1106 A & B
(8) Brushes, toilet bowl	C-1109
(9) Buckets, galvanized iron, 14 quart	C-1124B
(10) Cans, safety approved	S-2019
(11) Cleaning compounds:	
a. Synthetic detergent, powdered	C-1460A
b. Synthetic detergent, liquid	C-1460D
(12) Cleaner-surface finish, solvent type, for wood floors (this is the same material as item (36) and can be used for either purpose).	C-1845
(13) Cloth, treated, non-woven fabric, 18" x 24", for hand dusting and for sweeping with sweeping tool, C-1859.	C-1853
(14) Cloth, sponge (for use in swing rooms, toilet rooms and locker rooms).	C-955
(15) Dust pan (for use with C-1104B)	C-923B
(16) Floor finish, resin, water emulsion (for all soft floorings).	C-1840
(17) Work gloves, with leather palms, gauntlet cuff, wrist pad, knuckle strap and all leather thumb and forefinger.	S-2005
(18) Gloves, plastic-coated, standard size	S-2016
(19) Handles (for brush, deck, scrub, S-1112) ..	C-1112A
(20) Handles (for brush, floor sweeping, C-1106).	C-1106C
(21) Handles (for wet mops, C-1121D and C-1121E).	C-1121C
(22) Handles and frames (for sweeping mop, C-1841):	
a. 18"—for stairways or light areas	C-1841A

	<i>Item No.</i>
b. 24"—for general use	C-1841B
c. 36"—for open areas	C-1841C
(23) Knife, putty	
(24) Mop heads for sweeping mops:	
a. For 18" frame	C-1842A
b. For 24" frame	C-1842B
c. For 36" frame	C-1842C
(25) Mops, wet, wide band, 24 oz.	C-1121D
(26) Mops, wet, narrow band, 32 oz.	C-1121E
(27) Mops, wet, narrow band, 16 ounce	C-1121F
(28) Mopping Outfit:	
a. Wringer for 24 quart or 32-quart buckets.	C-1122A
b. Wringer for 16 quart buckets	C-1122E
c. Truck, on casters, with pull handle holding 2 buckets.	C-1122B
d. 24-quart capacity bucket	C-1122C
e. 32-quart capacity bucket	C-1122D
f. 16-quart capacity bucket	C-1122F
(29) Mop treatment (for sweeping mops)	C-1843 A & B
(30) Pads, synthetic fiber, for disc type floor machines:	
a. 13" scrubbing	C-1862C
b. 15" scrubbing	C-1862A
c. 18" scrubbing	C-1862B
d. 13" polishing	C-1863C
e. 15" polishing	C-1863A
f. 18" polishing	C-1863B
(31) Polyurethane coating for wood and cork floors (first-class offices only).	C-1846C
(32) Renewer, surface, solvent type for wood floors.	C-1848
(33) Safety line, high visibility plastic barrier rope.	C-1801
(34) Seal, for concrete floors	C-1849 A & B
(35) Seal, penetrating, fast drying, for wood floors.	C-1846
(36) Seal, for terrazzo floors	C-1845
(37) Shield, face	S-2000
(38) Sign, <i>Wet Floor</i> —pedestal type	C-1800A
(39) Steel wool for floor machine, #3:	
a. Pad, 15", for disc type floor machine ..	C-1831E
b. Pad, 18", for disc type floor machine ..	C-1831F
c. Pad, 13", for disc type floor machine ..	C-1831G
(40) Sweeping tool, swivel head, for use with treated disposable cloth (C-1853).	C-1859

B. BY LOCAL PURCHASE

Treated sweeping cloths and sweeping mops, with tools for their use, are available from industrial laundries on a rental basis. In some of their regions, Federal Supply Service, GSA, has contracted to furnish these rental services. Contact regional office of Federal Supply Service to obtain copies of these contracts which show areas served and prices. In larger cities, where competition is available, solicitation of bids locally may bring better prices than under the Federal Supply Service contract, but care should be exercised in investigating flash point of the treating oil (to be not below 325° F.), in assuring that cloths and mops bear Underwriter Laboratories Fire Hazard rating of 0 to 25, and in negating the possibility of acquiring cloths or mops which will deposit a slippery oil film on floor surfaces. This service is procured under the provisions of 633.4, Postal Manual.

C. FROM REGIONAL PROCUREMENT AND SUPPLY ON FORM 73

(See Publication 24, *Supply Catalog*, chapter 5)

1. Floor machines—disc type—1900.
2. Floor machines—drum type—1901.
3. Power sweepers—1904.
4. Janitor supply cart—1910.
5. Vacuum cleaner, wet pickup—1903C.